In the Drawings

Amend the drawings to include new Fig. 2. No new matter has been added.

REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Drawings Objections

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a), insomuch as the drawings must show every feature of the invention specified in the claims. The Examiner contends that the filter, filter components, dispenser, and filter housing are not shown. Applicants have added a new drawing to depict the claimed subject matter, which includes the filtering apparatus (filter, filter components, dispenser, and filter housing) not currently shown. Applicants submit that the new drawing, Fig. 2, supports the features identified in the claims, and places the drawings in a condition for allowance. No new matter has been added.

35 U.S.C. § 112 Rejections

The Examiner has rejected claims 8-11 and 17-29 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Examiner states that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Examiner contends that the specification is silent as to details or relative configuration of the claimed filter, filter

components, housing and dispenser, and their structural relationships to the valve and pressure regulator of the claimed apparatus. Applicants respectfully disagree.

The current specification details the filter system located *downstream* of the valve of the instant invention, and the relationship between the valve and the filter system.

> *Preferably, the valve further includes a filter system located downstream of the valve. The filter system may comprise filter components* having an insufficient burst strength or fatigue life to withstand about 300 psi pressure or 100,000 cycles of 150 psi pressure-depressurization cycles. *Preferably, the filter system is located in a refrigerator, and may further include a filtered fluid dispenser.*

Specification, p.2, l.33-p.3, l.6 (emphasis added).

> In still yet another aspect, the present invention is directed to an apparatus for removing contaminants from a liquid comprising: *filter components; a pressure limiting valve, upstream from the filter components,* the pressure limiting valve comprising: means for preventing transmission of elevated pressure to downstream components of the apparatus; and means for sensing pressure downstream from the means for preventing transmission of elevated pressure; and means for regulating flow of the liquid through the apparatus, the means for regulating flow located upstream or downstream of the pressure limiting valve; wherein upon exposure to a pressure greater than a target pressure range, *the means for sensing pressure triggers the means for preventing transmission of elevated pressure to the filter components to reversibly isolate the filter components from the pressure greater than the target pressure range for a period until a pressure less than the target pressure range is re-established.*

Specification, p.3, l.31-p.4, l.14 (emphasis added).

> Preferably, the pressure limiting valve isolates the filter components from pressures greater than or equal to about 60 to about 120 psi.

Specification, p.4, ll.21-24.

> Preferably, the filter components and the pressure limiting valve are located inside an appliance, and may further include a filtered liquid dispenser. Preferably, the filtered liquid dispenser, when actuated by a user, relieves pressure within the pressure limiting valve that is sensed by the means for sensing pressure to trigger the means for preventing pressure increases to reverse isolation of the filter components.

Specification, p.4, ll.26-34.

> In a further aspect, the present invention is directed to an apparatus for removing contaminants from a liquid comprising ... *filter components downstream from the valve*, the *components including a housing and a diffusive filtration medium contained within the housing*, wherein the filter components have insufficient structural integrity to meet burst and fatigue life requirements for the given filtration application, wherein upon exposure to a pressure greater than the target pressure range, the valve isolates the filter components and prevents transmission of the pressure greater than the target pressure range to the filter components until a pressure equal to or less than the target pressure range is re-established.

Specification, p.5, ll.1-22 (emphasis added).

> Filter system components (not shown) are located downstream from valve outlet 20. Filter system components include, but are not limited to, a filter housing containing a filtration medium, necessary tubing, fluid dispensing system, and the like.

Specification, p.9, ll.26-31.

> As a fluid enters upper housing 12 of valve 10 through valve inlet 15, the fluid enters a flow regulator 25 that controls and regulates fluid flow entering valve 10 and consequently into the downstream filter system components, particularly the filter medium.

Specification, p.10, ll.7-11.

Applicants respectfully submit that the specification fully supports the inclusion of filter components, housing and dispenser, and their structural relationships to the valve and pressure regulator of the claimed apparatus, as delineated by the specification excerpts, *supra*. The filter components are located downstream from the valve and include a housing and a diffusive filtration medium contained within the housing. The valve isolates the filter components and prevents transmission of fluid flow and of a pressure greater than a target pressure range to the filter components until a pressure equal to or less than the target pressure range is re-established. The filter system components include, but are not limited to, a filter housing containing a filtration medium, necessary tubing, and a fluid dispensing system.

Rejections under 35 U.S.C. § 102

Claims 1-3, 5, 7 and 12-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Knop, et al. (U.S. Patent No. 5,921,275). Applicants respectfully traverse this rejection.

Knop teaches a valve for reducing noise generated by cavitations from the flow of water therethrough. Since a major source of cavitation is the pressure drop associated with the valve (flow control device), Knop controls the pressure drop by creating a backpressure within the valve. Important to the Knop design, if excessive backpressure is created, the water flow rate may change from the desired amount and may create and undesirable performance. This is particularly of concern at low inlet water pressures. Knop, col. 1, ll.58-64. An objective of the Knop design is to control the pressure drop at steady-state water flow conditions as well as transient flow conditions. Knop, col. 2, l. 1-3.

In the Knop design, valve 10 controls the outlet 14 by pressing sealing diaphragm 34 on to valving surface 46 using a biasing spring 44. When the pressure created by the water flow exceeds a certain level, diaphragm 34 lifts from valving surface 46, compressing biasing spring 44, allowing water to flow towards, and out of, outlet 14. Knop, Fig. 2. Consequently, high pressure compresses biasing spring 44 and opens the valve allowing effluent to escape. Low pressure water that does not exceed the bias force of spring 44 will not flow since it will not lift diaphragm 34 off of valving surface 46.

In the present invention, the valve works to shut off fluid flow when a high pressure is introduced at the inlet. "The apparatus of the present invention prevents pressure increases from entering the downstream filter system when influent pressures exceed about 60 to about 120 psi, or higher." Specification, p.8, ll.30-33. During fluid flow operation, spring 90

biases shutoff tip 50 away from nozzle 37 at the chamber inlet 35, allowing fluid to flow from inlet 15 to chamber 30. Higher fluid pressure forces pressure activated piston 45 to bias spring 90 against lower housing 17 (in the direction of chamber outlet 40), and causes shutoff tip 50 to secure itself against nozzle 37, cutting fluid flow. Fig. 1.

> When pressure greater than the target pressure range is encountered by valve 10, the pressure is sensed by pressure actuating surface 65. The elevated pressure entering chamber 30 acts against pressure actuating surface 65 to force pressure actuated piston 45 to move towards valve outlet 20 such that shut off tip 50 is engaged and lodged within nozzle 37 of chamber inlet 35.

Specification, p.12, ll.7-13.

Thus, in the present invention, the elevated pressure is not transmitted further into the chamber, and fluid flow is curtailed to the downstream filter components, which are isolated and protected from the elevated pressure. Specification, p.12, ll.16-19. The Knop invention is specifically designed to allow water flow under high pressure, and teaches against a high pressure water cutoff. Moreover, the valve of the present invention is designed to block the fluid flow at the inlet when high pressure is sensed. The Knop design blocks the outlet under low pressure, and allows fluid flow under high pressure.

Applicants respectfully submit that the Knop design does not include the limitation on the "means for preventing transmission of elevated pressure" to "block the inlet of said chamber". Claim 1. Knop teaches opening the valve under higher pressure.

Furthermore, the Knop design is silent with respect to the following: "a shut off tip to reversibly block the inlet to said chamber to terminate further pressure increases inside said chamber;" "a shaft extending from the shut off tip, the shaft in fluid communication with the inlet and outlet to said chamber unless the shut off tip is engaged blocking the inlet to said chamber;" and "a pressure actuating surface responsive to pressure entering said apparatus,

distal from the shut off tip, upon which a pressure greater than the target pressure range of said apparatus causes movement of said pressure actuated piston causing the shut off tip to block the inlet to said chamber." Claim 3. Knop does not block an inlet. Nor does Knop block the inlet or the outlet under high pressure, or stop fluid flow under high pressure conditions. This would defeat the purpose of Knop for allowing flow under high pressure to eventually decrease the pressure, which is completely contrary to the instant invention.

In claim 5, the spring means assists in moving the pressure activated piston to disengage the shut off tip for the inlet of the chamber. In Knop, the spring engages the diaphragm to stop fluid flow under low pressure, and the engagement is done at the outlet, not at the chamber inlet. Applicants respectfully submit that for the reasons described above, Knop does not anticipate claims 1-3, 5 or 7.

Applicants have amended claim 12 and certain claims depended thereon to further distinguish the claimed invention over the cited prior art of Knop. Applicants respectfully submit that claims 1-3, 5, 7, and 12-16 are novel over the cited prior art of Knop, and are placed in a condition for allowance.

The Examiner has rejected claims 1-3, 5, 7 and 12-16 under 35 U.S.C. § 102(e) as being anticipated by Tanner, et al. (U.S. Publication No. US2004/0129617). Applicants respectfully disagree.

Tanner discloses a water filter device for treating low pressure water that has an automatic shutoff valve for arresting the flow of treated drinking water into the storage housing. Tanner, abstract. Tanner teaches that this automatic shutoff valve is a float. Tanner mentions, *but does not show or disclose*, a shutoff valve that may include a diaphragm and a piston with spring that responds to the water pressure of a full tank to move a stopper.

Tanner, ¶ 115. Applicants submit that Tanner is silent on the mechanical construction of the alternative automatic shutoff. Tanner makes no attempt to delineate the working mechanism of an automatic shutoff that uses a piston and spring. Furthermore, the present invention does not include a diaphragm, nor does the present invention terminate the flow of treated water when a downstream "tank" is full. Rather, the present invention acts on a pressure differential between the inlet and outlet, when the inlet pressure is greater than the outlet pressure. The present invention also utilizes a shaft on a piston that is connected to a shut off tip for stopping fluid flow when pressure in the chamber inlet is greater than pressure in the outlet. Tanner is completely silent on this (or any) type of piston configuration.

Applicants submit that the present invention is novel over the cited prior art of Tanner, and further that the Tanner disclosure is too vague to suggest or teach the salient features of the claimed invention.

Rejections under 35 U.S.C. § 103

Claims 4-6 stand rejected under 35 U.S.C. § 103(a) as being obvious from Knop or Tanner in view of Miller, et al. (U.S. Patent No. 6,517,615). Applicants respectfully traverse this rejection.

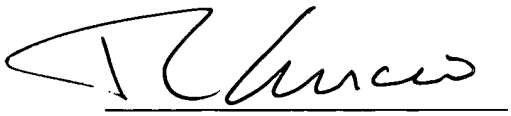
For the reasons cited above, claims 4-6, dependent upon claims 1 and 3 are not obvious from Knop or Tanner in combination with Miller. Moreover, none of the prior art teaches, discloses, or suggests an automatic shutoff responsive to a pressure differential where the pressure at the inlet is greater than the pressure at the outlet, such that when the pressure differential is present in this fashion, fluid flow is shut off from downstream components. In Miller, Fig. 4, the pressure regulator 16 includes a high-pressure inlet port used to fill cylinder 12. Consequently, Miller teaches fluid flow under high pressure at the

inlet. Additionally, the Miller shut off valve is activated manually not by pressure at the inlet. Miller, col. 5, ll.15-26. For these reasons, the combination of Miller with either Knop or Tanner does not teach, suggest, or disclose the instant invention as claimed.

The Examiner has further rejected claims 8-11 and 17-29 under 35 U.S.C. § 103(a) as being obvious from Knop in view of Fritze (U.S. Publication No. 2005/0103721) and Clack, et al. (U.S. Patent No. 5,460,719). The Examiner uses the art of Fritze and/or Clack to place the filter system downstream of the valve; however, for the reasons stated above, applicants submit that Knop does not disclose all of the limitations of the base claims, and consequently cannot teach the present invention in combination with Fritze or Clack.

It is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,



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